

1 **TITLE IX—STUDIES AND**
2 **PROGRAM SUPPORT**

3 **SECTION 901. GOALS.**

4 (a) IN GENERAL.—The Secretary shall conduct a bal-
5 anced set of programs of study to support Federal energy
6 policy and programs by the Department. Such programs
7 shall be focused on—

8 (1) increasing the efficiency of all energy inten-
9 sive sectors through conservation and improved tech-
10 nologies;

11 (2) promoting diversity of energy supply;

12 (3) decreasing the Nation's dependence on for-
13 eign energy supplies;

14 (4) improving United States energy security;
15 and

16 (5) decreasing the environmental impact of en-
17 ergy-related activities.

18 (b) GOALS.—The Secretary shall publish measurable
19 5-year cost and performance-based goals with each annual
20 budget submission in at least the following areas:

21 (1) Energy efficiency for buildings, energy-con-
22 suming industries, and vehicles.



1 (2) Electric energy generation (including dis-
2 tributed generation), transmission, and storage.

3 (3) Renewable energy technologies including
4 wind power, photovoltaics, solar thermal systems,
5 geothermal energy, hydrogen-fueled systems, bio-
6 mass-based systems, biofuels, and hydropower.

7 (4) Fossil energy including power generation,
8 onshore and offshore oil and gas resource recovery,
9 and transportation.

10 (5) Nuclear energy including programs for ex-
11 isting and advanced reactors and education of future
12 specialists.

13 (c) PUBLIC COMMENT.—The Secretary shall provide
14 mechanisms for input on the annually published goals
15 from industry, university, and other public sources.

16 (d) EFFECT OF GOALS.—

17 (1) NO NEW AUTHORITY OR REQUIREMENT.—
18 Nothing in subsection (a) or the annually published
19 goals shall—

20 (A) create any new—

21 (i) authority for any Federal agency;

22 or

23 (ii) requirement for any other person;



1 (B) be used by a Federal agency to sup-
2 port the establishment of regulatory standards
3 or regulatory requirements; or

4 (C) alter the authority of the Secretary to
5 make grants or other awards.

6 (2) NO LIMITATION.—Nothing in this sub-
7 section shall be construed to limit the authority of
8 the Secretary to impose conditions on grants or
9 other awards based on the goals in subsection (a) or
10 any subsequent modification thereto.

11 **SEC. 902. DEFINITIONS.**

12 For purposes of this title:

13 (1) DEPARTMENT.—The term “Department”
14 means the Department of Energy.

15 (2) DEPARTMENTAL MISSION.—The term “de-
16 partmental mission” means any of the functions
17 vested in the Secretary of Energy by the Depart-
18 ment of Energy Organization Act (42 U.S.C. 7101
19 et seq.) or other law.

20 (3) INSTITUTION OF HIGHER EDUCATION.—The
21 term “institution of higher education” has the
22 meaning given that term in section 101(a) of the
23 Higher Education Act of 1965 (20 U.S.C. 1001(a)).

24 (4) SECRETARY.—The term “Secretary” means
25 the Secretary of Energy.



1 **Subtitle A—Energy Efficiency**

2 **SEC. 904. ENERGY EFFICIENCY.**

3 (a) IN GENERAL.—The following sums are author-
4 ized to be appropriated to the Secretary for energy effi-
5 ciency and conservation activities, including activities au-
6 thorized under this subtitle:

7 (1) For fiscal year 2006, \$616,000,000.

8 (2) For fiscal year 2007, \$695,000,000.

9 (3) For fiscal year 2008, \$772,000,000.

10 (4) For fiscal year 2009, \$865,000,000.

11 (5) For fiscal year 2010, \$920,000,000.

12 (b) ALLOCATIONS.—From amounts authorized under
13 subsection (a), the following sums are authorized:

14 (1) For activities under section 905—

15 (A) for fiscal year 2006, \$20,000,000;

16 (B) for fiscal year 2007, \$30,000,000;

17 (C) for fiscal year 2008, \$50,000,000;

18 (D) for fiscal year 2009, \$50,000,000; and

19 (E) for fiscal year 2010, \$50,000,000.

20 (2) For activities under section 907—

21 (A) for fiscal year 2006, \$4,000,000; and

22 (B) for each of fiscal years 2007 through
23 2010, \$7,000,000.

24 (3) For activities under section 908—

25 (A) for fiscal year 2006, \$20,000,000;



- 1 (B) for fiscal year 2007, \$25,000,000;
2 (C) for fiscal year 2008, \$30,000,000;
3 (D) for fiscal year 2009, \$35,000,000; and
4 (E) for fiscal year 2010, \$40,000,000.

5 (4) For activities under section 909,
6 \$2,000,000 for each of fiscal years 2007 through
7 2010.

8 (c) EXTENDED AUTHORIZATION.—There are author-
9 ized to be appropriated to the Secretary for activities
10 under section 905, \$50,000,000 for each of fiscal years
11 2011 through 2015.

12 (d) LIMITATION ON USE OF FUNDS.—None of the
13 funds authorized to be appropriated under this section
14 may be used for—

15 (1) the issuance and implementation of energy
16 efficiency regulations;

17 (2) the Weatherization Assistance Program
18 under part A of title IV of the Energy Conservation
19 and Production Act (42 U.S.C. 6861 et seq.);

20 (3) the State Energy Program under part D of
21 title III of the Energy Policy and Conservation Act
22 (42 U.S.C. 6321 et seq.); or

23 (4) the Federal Energy Management Program
24 under part 3 of title V of the National Energy Con-
25 servation Policy Act (42 U.S.C. 8251 et seq.).



1 **SEC. 905. NEXT GENERATION LIGHTING INITIATIVE.**

2 (a) IN GENERAL.—The Secretary shall carry out a
3 Next Generation Lighting Initiative in accordance with
4 this section to support activities related to advanced solid-
5 state lighting technologies based on white light emitting
6 diodes.

7 (b) OBJECTIVES.—The objectives of the initiative
8 shall be to develop advanced solid-state organic and inor-
9 ganic lighting technologies based on white light emitting
10 diodes that, compared to incandescent and fluorescent
11 lighting technologies, are longer lasting; more energy-effi-
12 cient; and cost-competitive, and have less environmental
13 impact.

14 (c) INDUSTRY ALLIANCE.—The Secretary shall, not
15 later than 3 months after the date of enactment of this
16 section, competitively select an Industry Alliance to rep-
17 resent participants that are private, for-profit firms which,
18 as a group, are broadly representative of United States
19 solid state lighting expertise as a whole.

20 (d) STUDY.—

21 (1) IN GENERAL.—The Secretary shall carry
22 out the activities of the Next Generation Lighting
23 Initiative through competitively awarded grants, in-
24 cluding to Industry Alliance participants, National
25 Laboratories, and institutions of higher education.



1 (2) ASSISTANCE FROM THE INDUSTRY ALLI-
2 ANCE.—The Secretary shall annually solicit from the
3 Industry Alliance—

4 (A) comments to identify solid-state light-
5 ing technology needs;

6 (B) assessment of the progress of the Ini-
7 tiative’s research activities; and

8 (C) assistance in annually updating solid-
9 state lighting technology roadmaps.

10 (3) AVAILABILITY OF INFORMATION AND ROAD-
11 MAPS.—The information and roadmaps under para-
12 graph (2) shall be available to the public and public
13 response shall be solicited by the Secretary.

14 (e) INTELLECTUAL PROPERTY.—The Secretary may
15 require, in accordance with the authorities provided in sec-
16 tion 202(a)(ii) of title 35, United States Code, section 152
17 of the Atomic Energy Act of 1954 (42 U.S.C. 2182), and
18 section 9 of the Federal Nonnuclear Energy Research and
19 Development Act of 1974 (42 U.S.C. 5908), that—

20 (1) for any new invention resulting from activi-
21 ties under subsection (d)—

22 (A) the Industry Alliance members that
23 are active participants in research, development,
24 and demonstration activities related to the ad-
25 vanced solid-state lighting technologies that are



1 the subject of this section shall be granted first
2 option to negotiate with the invention owner
3 nonexclusive licenses and royalties for uses of
4 the invention related to solid-state lighting on
5 terms that are reasonable under the cir-
6 cumstances; and

7 (B)(i) for 1 year after a United States pat-
8 ent is issued for the invention, the patent hold-
9 er shall not negotiate any license or royalty
10 with any entity that is not a participant in the
11 Industry Alliance described in subparagraph
12 (A); and

13 (ii) during the year described in clause (i),
14 the invention owner shall negotiate nonexclusive
15 licenses and royalties in good faith with any in-
16 terested participant in the Industry Alliance de-
17 scribed in subparagraph (A); and

18 (2) such other terms as the Secretary deter-
19 mines are required to promote accelerated commer-
20 cialization of inventions made under the Initiative.

21 (f) NATIONAL ACADEMY REVIEW.—The Secretary
22 shall enter into an arrangement with the National Acad-
23 emy of Sciences to conduct periodic reviews of the Next
24 Generation Lighting Initiative. The Academy shall review
25 the priorities, technical milestones, and plans for tech-



1 nology transfer and progress towards achieving them. The
2 Secretary shall consider the results of such reviews in eval-
3 uating the information obtained under subsection (d)(2).

4 (g) DEFINITIONS.—As used in this section:

5 (1) ADVANCED SOLID-STATE LIGHTING.—The
6 term “advanced solid-state lighting” means a
7 semiconducting device package and delivery system
8 that produces white light using externally applied
9 voltage.

10 (2) INDUSTRY ALLIANCE.—The term “Industry
11 Alliance” means an entity selected by the Secretary
12 under subsection (c).

13 (3) WHITE LIGHT EMITTING DIODE.—The term
14 “white light emitting diode” means a
15 semiconducting package, utilizing either organic or
16 inorganic materials, that produces white light using
17 externally applied voltage.

18 **SEC. 906. NATIONAL BUILDING PERFORMANCE INITIATIVE.**

19 (a) INTERAGENCY GROUP.—Not later than 90 days
20 after the date of enactment of this Act, the President shall
21 establish an interagency group to develop, in coordination
22 with the advisory committee established under subsection
23 (e), a National Building Performance Initiative (in this
24 section referred to as the “Initiative”). The interagency
25 group shall be co-chaired by appropriate officials of the



1 Department and the Department of Commerce, who shall
2 jointly arrange for the provision of necessary administra-
3 tive support to the group.

4 (b) INTEGRATION OF EFFORTS.—The Initiative,
5 working with the National Institute of Building Sciences,
6 shall integrate Federal, State, and voluntary private sector
7 efforts to reduce the costs of construction, operation,
8 maintenance, and renovation of commercial, industrial, in-
9 stitutional, and residential buildings.

10 (c) DEPARTMENT OF ENERGY ROLE.—Within the
11 Federal portion of the Initiative, the Department shall be
12 the lead agency for all aspects of building performance re-
13 lated to use and conservation of energy.

14 (d) ADVISORY COMMITTEE.—

15 (1) ESTABLISHMENT.—The Secretary, in con-
16 sultation with the Secretary of Commerce and the
17 Director of the Office of Science and Technology
18 Policy, shall establish an advisory committee to—

19 (A) analyze and provide recommendations
20 on potential private sector roles and participa-
21 tion in the Initiative; and

22 (B) review and provide recommendations
23 on the plan described in subsection (c).

24 (2) MEMBERSHIP.—Membership of the advisory
25 committee shall include representatives with a broad



1 range of appropriate expertise, including expertise
2 in—

3 (A) building technology;

4 (B) architecture, engineering, and building
5 materials and systems; and

6 (C) the residential, commercial, and indus-
7 trial sectors of the construction industry.

8 (e) CONSTRUCTION.—Nothing in this section pro-
9 vides any Federal agency with new authority to regulate
10 building performance.

11 **SEC. 907. SECONDARY ELECTRIC VEHICLE BATTERY USE**
12 **PROGRAM.**

13 (a) DEFINITIONS.—For purposes of this section:

14 (1) ASSOCIATED EQUIPMENT.—The term “asso-
15 ciated equipment” means equipment located where
16 the batteries will be used that is necessary to enable
17 the use of the energy stored in the batteries.

18 (2) BATTERY.—The term “battery” means an
19 energy storage device that previously has been used
20 to provide motive power in a vehicle powered in
21 whole or in part by electricity.

22 (b) PROGRAM.—The Secretary shall establish and
23 conduct a program of study for the secondary use of bat-
24 teries if the Secretary finds that there are sufficient num-



1 bers of such batteries to support the program. The pro-
2 gram shall be—

3 (1) designed to demonstrate the use of batteries
4 in secondary applications, including utility and com-
5 mercial power storage and power quality;

6 (2) structured to evaluate the performance, in-
7 cluding useful service life and costs, of such bat-
8 teries in field operations, and the necessary sup-
9 porting infrastructure, including reuse and disposal
10 of batteries; and

11 (3) coordinated with ongoing secondary battery
12 use programs at the National Laboratories and in
13 industry.

14 (c) SOLICITATION.—Not later than 180 days after
15 the date of enactment of this Act, if the Secretary finds
16 under subsection (b) that there are sufficient numbers of
17 batteries to support the program, the Secretary shall so-
18 licit proposals to demonstrate the secondary use of bat-
19 teries and associated equipment and supporting infra-
20 structure in geographic locations throughout the United
21 States. The Secretary may make additional solicitations
22 for proposals if the Secretary determines that such solici-
23 tations are necessary to carry out this section.

24 (d) SELECTION OF PROPOSALS.—



1 (1) IN GENERAL.—The Secretary shall, not
2 later than 90 days after the closing date established
3 by the Secretary for receipt of proposals under sub-
4 section (c), select up to 5 proposals which may re-
5 ceive financial assistance under this section, subject
6 to the availability of appropriations.

7 (2) DIVERSITY; ENVIRONMENTAL EFFECT.—In
8 selecting proposals, the Secretary shall consider di-
9 versity of battery type, geographic and climatic di-
10 versity, and life-cycle environmental effects of the
11 approaches.

12 (3) LIMITATION.—No 1 project selected under
13 this section shall receive more than 25 percent of the
14 funds authorized for the program under this section.

15 (4) OPTIMIZATION OF FEDERAL RESOURCES.—
16 The Secretary shall consider the extent of involve-
17 ment of State or local government and other persons
18 in each demonstration project to optimize use of
19 Federal resources.

20 (5) OTHER CRITERIA.—The Secretary may con-
21 sider such other criteria as the Secretary considers
22 appropriate.

23 (e) CONDITIONS.—The Secretary shall require that—



1 (1) relevant information be provided to the De-
2 partment, the users of the batteries, the proposers,
3 and the battery manufacturers;

4 (2) the proposer provide at least 50 percent of
5 the costs associated with the proposal; and

6 (3) the proposer provide to the Secretary such
7 information regarding the disposal of the batteries
8 as the Secretary may require to ensure that the pro-
9 poser disposes of the batteries in accordance with
10 applicable law.

11 **SEC. 908. ENERGY EFFICIENCY STUDY INITIATIVE.**

12 (a) ESTABLISHMENT.—The Secretary shall establish
13 an Energy Efficiency Science Initiative to be managed by
14 the Assistant Secretary in the Department with responsi-
15 bility for energy conservation under section 203(a)(9) of
16 the Department of Energy Organization Act (42 U.S.C.
17 7133(a)(9)), in consultation with the Director of the Of-
18 fice of Science, for grants to be competitively awarded and
19 subject to peer review for studies relating to energy effi-
20 ciency.

21 (b) REPORT.—The Secretary shall submit to Con-
22 gress, along with the President's annual budget request
23 under section 1105(a) of title 31, United States Code, a
24 report on the activities of the Energy Efficiency Science
25 Initiative, including a description of the process used to



1 award the funds and an explanation of how the studies
2 relate to energy efficiency.

3 **SEC. 909. ELECTRIC MOTOR CONTROL TECHNOLOGY.**

4 The Secretary shall conduct a program of study on
5 advanced control devices to improve the energy efficiency
6 of electric motors used in heating, ventilation, air condi-
7 tioning, and comparable systems.

8 **SEC. 910. ADVANCED ENERGY TECHNOLOGY TRANSFER**
9 **CENTERS.**

10 (a) GRANTS.—Not later than 18 months after the
11 date of enactment of this Act, the Secretary shall make
12 grants to nonprofit institutions, State and local govern-
13 ments, or universities (or consortia thereof), to establish
14 a geographically dispersed network of Advanced Energy
15 Technology Transfer Centers, to be located in areas the
16 Secretary determines have the greatest need of the serv-
17 ices of such Centers.

18 (b) ACTIVITIES.—

19 (1) IN GENERAL.—Each Center shall operate a
20 program to encourage advanced energy methods and
21 technologies through education and outreach to
22 building and industrial professionals, and to other
23 individuals and organizations with an interest in ef-
24 ficient energy use.



1 (2) ADVISORY PANEL.—Each Center shall es-
2 tablish an advisory panel to advise the Center on
3 how best to accomplish the activities under para-
4 graph (1).

5 (c) APPLICATION.—A person seeking a grant under
6 this section shall submit to the Secretary an application
7 in such form and containing such information as the Sec-
8 retary may require. The Secretary may award a grant
9 under this section to an entity already in existence if the
10 entity is otherwise eligible under this section.

11 (d) SELECTION CRITERIA.—The Secretary shall
12 award grants under this section on the basis of the fol-
13 lowing criteria, at a minimum:

14 (1) The ability of the applicant to carry out the
15 activities in subsection (b).

16 (2) The extent to which the applicant will co-
17 ordinate the activities of the Center with other enti-
18 ties, such as State and local governments, utilities,
19 and educational and research institutions.

20 (e) MATCHING FUNDS.—The Secretary shall require
21 a non-Federal matching requirement of at least 50 percent
22 of the costs of establishing and operating each Center.

23 (f) ADVISORY COMMITTEE.—The Secretary shall es-
24 tablish an advisory committee to advise the Secretary on
25 the establishment of Centers under this section. The advi-



1 sory committee shall be composed of individuals with ex-
2 pertise in the area of advanced energy methods and tech-
3 nologies, including at least 1 representative from—

- 4 (1) State or local energy offices;
- 5 (2) energy professionals;
- 6 (3) trade or professional associations;
- 7 (4) architects, engineers, or construction profes-
8 sionals;
- 9 (5) manufacturers;
- 10 (6) the research community; and
- 11 (7) nonprofit energy or environmental organiza-
12 tions.

13 (g) DEFINITIONS.—For purposes of this section:

14 (1) ADVANCED ENERGY METHODS AND TECH-
15 NOLOGIES.—The term “advanced energy methods
16 and technologies” means all methods and tech-
17 nologies that promote energy efficiency and con-
18 servation, including distributed generation tech-
19 nologies, and life-cycle analysis of energy use.

20 (2) CENTER.—The term “Center” means an
21 Advanced Energy Technology Transfer Center estab-
22 lished pursuant to this section.

23 (3) DISTRIBUTED GENERATION.—The term
24 “distributed generation” means an electric power



1 generation facility that is designed to serve retail
2 electric consumers at or near the facility site.

3 **Subtitle B—Distributed Energy and**
4 **Electric Energy Systems**

5 **SEC. 911. DISTRIBUTED ENERGY AND ELECTRIC ENERGY**
6 **SYSTEMS.**

7 (a) IN GENERAL.—The following sums are author-
8 ized to be appropriated to the Secretary for distributed
9 energy and electric energy systems activities, including ac-
10 tivities authorized under this subtitle:

11 (1) For fiscal year 2006, \$190,000,000.

12 (2) For fiscal year 2007, \$200,000,000.

13 (3) For fiscal year 2008, \$220,000,000.

14 (4) For fiscal year 2009, \$240,000,000.

15 (5) For fiscal year 2010, \$260,000,000.

16 (b) MICRO-COGENERATION ENERGY TECH-
17 NOLOGY.—From amounts authorized under subsection
18 (a), \$20,000,000 for each of fiscal years 2006 and 2007
19 is authorized for activities under section 914.

20 **SEC. 912. HYBRID DISTRIBUTED POWER SYSTEMS.**

21 Not later than 1 year after the date of enactment
22 of this Act, the Secretary shall develop and transmit to
23 Congress a strategy for a comprehensive program of study
24 to develop hybrid distributed power systems that
25 combine—



1 (1) 1 or more renewable electric power genera-
2 tion technologies of 10 megawatts or less located
3 near the site of electric energy use; and

4 (2) nonintermittent electric power generation
5 technologies suitable for use in a distributed power
6 system.

7 **SEC. 913. HIGH POWER DENSITY INDUSTRY PROGRAM.**

8 The Secretary shall establish a comprehensive pro-
9 gram of study to improve energy efficiency of high power
10 density facilities, including data centers, server farms, and
11 telecommunications facilities. Such program shall consider
12 technologies that provide significant improvement in ther-
13 mal controls, metering, load management, peak load re-
14 duction, or the efficient cooling of electronics.

15 **SEC. 914. MICRO-COGENERATION ENERGY TECHNOLOGY.**

16 The Secretary shall make competitive, merit-based
17 grants to consortia for micro-cogeneration energy tech-
18 nology. The consortia shall explore—

19 (1) the use of small-scale combined heat and
20 power in residential heating appliances; and

21 (2) the use of excess power to operate other ap-
22 pliances within the residence and supply excess gen-
23 erated power to the power grid.



1 **SEC. 915. DISTRIBUTED ENERGY TECHNOLOGY PROGRAM.**

2 The Secretary, within the sums authorized under sec-
3 tion 911(a), may provide financial assistance to coordi-
4 nating consortia of interdisciplinary participants to accel-
5 erate the utilization of distributed energy technologies,
6 such as fuel cells, microturbines, reciprocating engines,
7 thermally activated technologies, and combined heat and
8 power systems, in highly energy intensive commercial ap-
9 plications.

10 **SEC. 916. RECIPROCATING POWER.**

11 The Secretary shall conduct a program of study re-
12 garding fuel system optimization and emissions reduction
13 after-treatment technologies for industrial reciprocating
14 engines. Such after-treatment technologies shall use proc-
15 esses that reduce emissions by recirculating exhaust gases
16 and shall be designed to be retrofitted to any new or exist-
17 ing diesel or natural gas engine used for power generation,
18 peaking power generation, combined heat and power, or
19 compression.

20 **Subtitle C—Renewable Energy**

21 **SEC. 918. RENEWABLE ENERGY.**

22 (a) IN GENERAL.—The following sums are author-
23 ized to be appropriated to the Secretary for renewable en-
24 ergy activities, including activities authorized under this
25 subtitle:

26 (1) For fiscal year 2006, \$480,000,000.



1 (2) For fiscal year 2007, \$550,000,000.

2 (3) For fiscal year 2008, \$610,000,000.

3 (4) For fiscal year 2009, \$659,000,000.

4 (5) For fiscal year 2010, \$710,000,000.

5 (b) BIOENERGY.—From the amounts authorized
6 under subsection (a), the following sums are authorized
7 to be appropriated to carry out section 919:

8 (1) For fiscal year 2006, \$135,425,000.

9 (2) For fiscal year 2007, \$155,600,000.

10 (3) For fiscal year 2008, \$167,650,000.

11 (4) For fiscal year 2009, \$180,000,000.

12 (5) For fiscal year 2010, \$192,000,000.

13 (c) CONCENTRATING SOLAR POWER.—From
14 amounts authorized under subsection (a), the following
15 sums are authorized to be appropriated to carry out sec-
16 tion 920:

17 (1) For fiscal year 2006, \$20,000,000.

18 (2) For fiscal year 2007, \$40,000,000.

19 (3) For each of fiscal years 2008, 2009, and
20 2010, \$50,000,000.

21 (d) PUBLIC BUILDINGS.—From the amounts author-
22 ized under subsection (a), \$30,000,000 for each of the fis-
23 cal years 2006 through 2010 are authorized to be appro-
24 priated to carry out section 922.

25 (e) LIMITS ON USE OF FUNDS.—



1 (1) NO FUNDS FOR RENEWABLE SUPPORT AND
2 IMPLEMENTATION.—None of the funds authorized to
3 be appropriated under this section may be used for
4 Renewable Support and Implementation.

5 (2) GRANTS.—Of the funds authorized under
6 subsection (b), not less than \$5,000,000 for each fis-
7 cal year shall be made available for grants to His-
8 torically Black Colleges and Universities, Tribal Col-
9 leges, and Hispanic-Serving Institutions.

10 (3) REGIONAL FIELD VERIFICATION PRO-
11 GRAM.—Of the funds authorized under subsection
12 (a), not less than \$4,000,000 for each fiscal year
13 shall be made available for the Regional Field Ver-
14 ification Program of the Department.

15 (4) OFF-STREAM PUMPED STORAGE HYDRO-
16 POWER.—Of the funds authorized under subsection
17 (a), such sums as may be necessary shall be made
18 available for demonstration projects of off-stream
19 pumped storage hydropower.

20 (f) CONSULTATION.—In carrying out this subtitle,
21 the Secretary, in consultation with the Secretary of Agri-
22 culture, shall demonstrate the use of advanced wind power
23 technology, including combined use with coal gasification;
24 biomass; geothermal energy systems; and other renewable



1 energy technologies to assist in delivering electricity to
2 rural and remote locations.

3 **SEC. 919. BIOENERGY PROGRAMS.**

4 (a) DEFINITIONS.—For the purposes of this section:

5 (1) The term “agricultural byproducts” in-
6 cludes waste products, including poultry fat and
7 poultry waste.

8 (2) The term “cellulosic biomass” means any
9 portion of a crop containing lignocellulose or hemi-
10 cellulose, including barley grain, grapeseed, forest
11 thinnings, rice bran, rice hulls, rice straw, soybean
12 matter, and sugarcane bagasse, or any crop grown
13 specifically for the purpose of producing cellulosic
14 feedstocks.

15 (b) PROGRAM.—The Secretary shall conduct a pro-
16 gram of study for bioenergy, including—

17 (1) biopower energy systems;

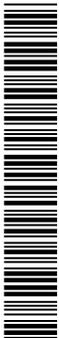
18 (2) biofuels;

19 (3) bio-based products;

20 (4) integrated biorefineries that may produce
21 biopower, biofuels, and bio-based products;

22 (5) cross-cutting research and development in
23 feedstocks and enzymes; and

24 (6) economic analysis.



1 (c) BIOFUELS AND BIO-BASED PRODUCTS.—The
2 goals of the biofuels and bio-based products programs
3 shall be to promote, in partnership with industry—

4 (1) advanced biochemical and thermochemical
5 conversion technologies capable of making biofuels
6 that are price-competitive with gasoline or diesel in
7 either internal combustion engines or fuel cell-pow-
8 ered vehicles, and bio-based products from a variety
9 of feedstocks, including grains, cellulosic biomass,
10 and other agricultural byproducts; and

11 (2) advanced biotechnology processes capable of
12 making biofuels and bio-based products with empha-
13 sis on development of biorefinery technologies using
14 enzyme-based processing systems.

15 **SEC. 920. CONCENTRATING SOLAR POWER STUDY PRO-**
16 **GRAM.**

17 (a) IN GENERAL.—The Secretary shall conduct a
18 program of study to evaluate the potential of concen-
19 trating solar power for hydrogen production, including co-
20 generation approaches for both hydrogen and electricity.
21 Such program shall take advantage of existing facilities
22 to the extent possible and shall include—

23 (1) development of optimized technologies that
24 are common to both electricity and hydrogen produc-
25 tion;



1 (2) evaluation of thermochemical cycles for hy-
2 drogen production at the temperatures attainable
3 with concentrating solar power;

4 (3) evaluation of materials issues for the
5 thermochemical cycles described in paragraph (2);

6 (4) system architectures and economics studies;
7 and

8 (5) coordination with activities in the Advanced
9 Reactor Hydrogen Cogeneration Project on high
10 temperature materials, thermochemical cycles, and
11 economic issues.

12 (b) ASSESSMENT.—In carrying out the program
13 under this section, the Secretary shall—

14 (1) assess conflicting guidance on the economic
15 potential of concentrating solar power for electricity
16 production received from the National Research
17 Council report entitled “Renewable Power Pathways:
18 A Review of the U.S. Department of Energy’s Re-
19 newable Energy Programs” in 2000 and subsequent
20 Department-funded reviews of that report; and

21 (2) provide an assessment of the potential im-
22 pact of the technology before, or concurrent with,
23 submission of the fiscal year 2008 budget.

24 (c) REPORT.—Not later than 5 years after the date
25 of enactment of this Act, the Secretary shall provide a re-



1 port to Congress on the economic and technical potential
2 for electricity or hydrogen production, with or without co-
3 generation, with concentrating solar power.

4 **SEC. 921. MISCELLANEOUS PROJECTS.**

5 The Secretary may conduct studies for—

6 (1) ocean energy, including wave energy; and

7 (2) the combined use of renewable energy tech-
8 nologies with one another and with other energy
9 technologies, including the combined use of wind
10 power and coal gasification technologies.

11 **SEC. 922. RENEWABLE ENERGY IN PUBLIC BUILDINGS.**

12 (a) **TECHNOLOGY TRANSFER PROGRAM.**—The Sec-
13 retary shall establish a program for the transfer of innova-
14 tive technologies for solar and other renewable energy
15 sources in buildings owned or operated by a State or local
16 government, and for the dissemination of information re-
17 sulting from an assessment of such program to interested
18 parties.

19 (b) **LIMIT ON FEDERAL FUNDING.**—The Secretary
20 shall provide under this section no more than 40 percent
21 of the incremental costs of the solar or other renewable
22 energy source project funded.

23 (c) **REQUIREMENT.**—As part of the application for
24 awards under this section, the Secretary shall require all
25 applicants—



1 (1) to demonstrate a continuing commitment to
2 the use of solar and other renewable energy sources
3 in buildings they own or operate; and

4 (2) to state how they expect any award to fur-
5 ther their transition to the significant use of renew-
6 able energy.

7 **Subtitle D—Nuclear Energy**

8 **SEC. 924. NUCLEAR ENERGY.**

9 (a) CORE PROGRAMS.—The following sums are au-
10 thorized to be appropriated to the Secretary for nuclear
11 energy research, development, demonstration, and com-
12 mercial application activities, including activities author-
13 ized under this subtitle, other than those described in sub-
14 section (b):

15 (1) For fiscal year 2006, \$273,000,000.

16 (2) For fiscal year 2007, \$355,000,000.

17 (3) For fiscal year 2008, \$430,000,000.

18 (4) For fiscal year 2009, \$455,000,000.

19 (5) For fiscal year 2010, \$545,000,000.

20 (b) NUCLEAR INFRASTRUCTURE SUPPORT.—The fol-
21 lowing sums are authorized to be appropriated to the Sec-
22 retary for activities under section 925(e):

23 (1) For fiscal year 2006, \$125,000,000.

24 (2) For fiscal year 2007, \$130,000,000.

25 (3) For fiscal year 2008, \$135,000,000.



1 (4) For fiscal year 2009, \$140,000,000.

2 (5) For fiscal year 2010, \$145,000,000.

3 (c) ALLOCATIONS.—From amounts authorized under
4 subsection (a), the following sums are authorized:

5 (1) For activities under section 926—

6 (A) for fiscal year 2006, \$140,000,000;

7 (B) for fiscal year 2007, \$145,000,000;

8 (C) for fiscal year 2008, \$150,000,000;

9 (D) for fiscal year 2009, \$155,000,000;

10 and

11 (E) for fiscal year 2010, \$275,000,000.

12 (2) For activities under section 927—

13 (A) for fiscal year 2006, \$35,200,000;

14 (B) for fiscal year 2007, \$44,350,000;

15 (C) for fiscal year 2008, \$49,200,000;

16 (D) for fiscal year 2009, \$54,950,000; and

17 (E) for fiscal year 2010, \$60,000,000.

18 (3) For activities under section 929, for each of
19 fiscal years 2006 through 2010, \$6,000,000.

20 (d) LIMITATION ON USE OF FUNDS.—None of the
21 funds authorized under this section may be used for de-
22 commissioning the Fast Flux Test Facility.



1 **SEC. 925. NUCLEAR ENERGY RESEARCH AND DEVELOP-**
2 **MENT PROGRAMS.**

3 (a) NUCLEAR ENERGY RESEARCH INITIATIVE.—The
4 Secretary shall carry out a Nuclear Energy Research Ini-
5 tiative for research and development related to nuclear en-
6 ergy.

7 (b) NUCLEAR ENERGY PLANT OPTIMIZATION PRO-
8 GRAM.—The Secretary shall carry out a Nuclear Energy
9 Plant Optimization Program to support research and de-
10 velopment activities addressing reliability, availability, pro-
11 ductivity, component aging, safety, and security of existing
12 nuclear power plants.

13 (c) NUCLEAR POWER 2010 PROGRAM.—The Sec-
14 retary shall carry out a Nuclear Power 2010 Program,
15 consistent with recommendations in the October 2001 re-
16 port entitled “A Roadmap to Deploy New Nuclear Power
17 Plants in the United States by 2010” issued by the Nu-
18 clear Energy Research Advisory Committee of the Depart-
19 ment. Whatever type of reactor is chosen for the hydrogen
20 cogeneration project under subtitle C of title VI, that type
21 shall not be addressed in the Program under this section.

22 The Program shall include—

23 (1) support for first-of-a-kind engineering de-
24 sign and certification expenses of advanced nuclear
25 power plant designs, which offer improved safety
26 and economics over current conventional plants and



1 the promise of near-term to medium-term commer-
2 cial deployment;

3 (2) action by the Secretary to encourage domes-
4 tic power companies to install new nuclear plant ca-
5 pacity as soon as possible;

6 (3) utilization of the expertise and capabilities
7 of industry, universities, and National Laboratories
8 in evaluation of advanced nuclear fuel cycles and
9 fuels testing;

10 (4) consideration of proliferation-resistant pas-
11 sively-safe, small reactors suitable for long-term elec-
12 tricity production without refueling and suitable for
13 use in remote installations;

14 (5) participation of international collaborators
15 in research, development, design, and deployment ef-
16 forts as appropriate and consistent with United
17 States interests in nonproliferation of nuclear weap-
18 ons;

19 (6) encouragement for university and industry
20 participation; and

21 (7) selection of projects such as to strengthen
22 the competitive position of the domestic nuclear
23 power industrial infrastructure.

24 (d) GENERATION IV NUCLEAR ENERGY SYSTEMS
25 INITIATIVE.—The Secretary shall carry out a Generation



1 IV Nuclear Energy Systems Initiative to develop an over-
2 all technology plan and to support research and develop-
3 ment necessary to make an informed technical decision
4 about the most promising candidates for eventual commer-
5 cial application. The Initiative shall examine advanced
6 proliferation-resistant and passively safe reactor designs,
7 including designs that—

8 (1) are economically competitive with other elec-
9 tric power generation plants;

10 (2) have higher efficiency, lower cost, and im-
11 proved safety compared to reactors in operation on
12 the date of enactment of this Act;

13 (3) use fuels that are proliferation-resistant and
14 have substantially reduced production of high-level
15 waste per unit of output; and

16 (4) use improved instrumentation.

17 (e) NUCLEAR INFRASTRUCTURE SUPPORT.—The
18 Secretary shall develop and implement a strategy for the
19 facilities of the Office of Nuclear Energy, Science, and
20 Technology and shall transmit a report containing the
21 strategy along with the President's budget request to Con-
22 gress for fiscal year 2006.

23 **SEC. 926. ADVANCED FUEL CYCLE INITIATIVE.**

24 (a) IN GENERAL.—The Secretary, through the Direc-
25 tor of the Office of Nuclear Energy, Science, and Tech-



1 nology, shall conduct an advanced fuel recycling tech-
2 nology research and development program to evaluate pro-
3 liferation-resistant fuel recycling and transmutation tech-
4 nologies that minimize environmental or public health and
5 safety impacts as an alternative to aqueous reprocessing
6 technologies deployed as of the date of enactment of this
7 Act in support of evaluation of alternative national strate-
8 gies for spent nuclear fuel and the Generation IV ad-
9 vanced reactor concepts, subject to annual review by the
10 Secretary's Nuclear Energy Research Advisory Committee
11 or other independent entity, as appropriate. Opportunities
12 to enhance progress of the program through international
13 cooperation should be sought.

14 (b) REPORTS.—The Secretary shall report on the ac-
15 tivities of the advanced fuel recycling technology research
16 and development program as part of the Department's an-
17 nual budget submission.

18 **SEC. 927. UNIVERSITY NUCLEAR SCIENCE AND ENGINEER-**
19 **ING SUPPORT.**

20 (a) ESTABLISHMENT.—The Secretary shall support
21 a program to invest in human resources and infrastructure
22 in the nuclear sciences and engineering and related fields
23 (including health physics and nuclear and radiochemistry),
24 consistent with departmental missions related to civilian
25 nuclear research and development.



1 (b) DUTIES.—In carrying out the program under this
2 section, the Secretary shall establish fellowship and faculty
3 assistance programs, as well as provide support for funda-
4 mental research and encourage collaborative research
5 among industry, National Laboratories, and universities
6 through the Nuclear Energy Research Initiative. The Sec-
7 retary is encouraged to support activities addressing the
8 entire fuel cycle through involvement of both the Office
9 of Nuclear Energy, Science, and Technology and the Of-
10 fice of Civilian Radioactive Waste Management. The Sec-
11 retary shall support communication and outreach related
12 to nuclear science, engineering, and nuclear waste man-
13 agement, consistent with interests of the United States in
14 nonproliferation of nuclear weapons capabilities.

15 (c) STRENGTHENING UNIVERSITY RESEARCH AND
16 TRAINING REACTORS AND ASSOCIATED INFRASTRUC-
17 TURE.—Activities under this section may include—

18 (1) converting research and training reactors
19 currently using high-enrichment fuels to low-enrich-
20 ment fuels, upgrading operational instrumentation,
21 and sharing of reactors among institutions of higher
22 education;

23 (2) providing technical assistance, in collabora-
24 tion with the United States nuclear industry, in reli-



1 censing and upgrading research and training reac-
2 tors as part of a student training program; and

3 (3) providing funding, through the Innovations
4 in Nuclear Infrastructure and Education Program,
5 for reactor improvements as part of a focused effort
6 that emphasizes research, training, and education.

7 (d) UNIVERSITY NATIONAL LABORATORY INTER-
8 ACTIONS.—The Secretary shall develop sabbatical fellow-
9 ship and visiting scientist programs to encourage sharing
10 of personnel between National Laboratories and univer-
11 sities.

12 (e) OPERATING AND MAINTENANCE COSTS.—Fund-
13 ing for a research project provided under this section may
14 be used to offset a portion of the operating and mainte-
15 nance costs of a research and training reactor at an insti-
16 tution of higher education used in the research project.

17 **SEC. 928. SECURITY OF REACTOR DESIGNS.**

18 The Secretary, through the Director of the Office of
19 Nuclear Energy, Science, and Technology, shall conduct
20 a research and development program on cost-effective
21 technologies for increasing the safety of reactor designs
22 from natural phenomena and the security of reactor de-
23 signs from deliberate attacks.



1 **SEC. 929. ALTERNATIVES TO INDUSTRIAL RADIOACTIVE**
2 **SOURCES.**

3 (a) STUDY.—The Secretary shall conduct a study and
4 provide a report to Congress not later than August 1,
5 2006. The study shall—

6 (1) survey industrial applications of large radio-
7 active sources, including well-logging sources;

8 (2) review current domestic and international
9 Department, Department of Defense, Department of
10 State, and commercial programs to manage and dis-
11 pose of radioactive sources;

12 (3) discuss disposal options and practices for
13 currently deployed or future sources and, if defi-
14 ciencies are noted in existing disposal options or
15 practices for either deployed or future sources, rec-
16 ommend options to remedy deficiencies; and

17 (4) develop a program plan for research and de-
18 velopment to develop alternatives to large industrial
19 sources that reduce safety, environmental, or pro-
20 liferation risks to either workers using the sources or
21 the public.

22 (b) PROGRAM.—The Secretary shall establish a re-
23 search and development program to implement the pro-
24 gram plan developed under subsection (a)(4). The pro-
25 gram shall include miniaturized particle accelerators for
26 well-logging or other industrial applications and portable



1 accelerators for production of short-lived radioactive mate-
2 rials at an industrial site.

3 **SEC. 930. GEOLOGICAL ISOLATION OF SPENT FUEL.**

4 The Secretary shall conduct a study to determine the
5 feasibility of deep borehole disposal of spent nuclear fuel
6 and high-level radioactive waste. The study shall empha-
7 size geological, chemical, and hydrological characterization
8 of, and design of engineered structures for, deep borehole
9 environments. Not later than 1 year after the date of en-
10 actment of this Act, the Secretary shall transmit the study
11 to Congress.

12 **Subtitle E—Fossil Energy**

13 **PART I—STUDIES AND PROGRAM SUPPORT**

14 **SEC. 931. FOSSIL ENERGY.**

15 (a) IN GENERAL.—The following sums are author-
16 ized to be appropriated to the Secretary for fossil energy
17 activities, including activities authorized under this part:

18 (1) For fiscal year 2006, \$530,000,000.

19 (2) For fiscal year 2007, \$556,000,000.

20 (3) For fiscal year 2008, \$583,000,000.

21 (4) For fiscal year 2009, \$611,000,000.

22 (5) For fiscal year 2010, \$626,000,000.

23 (b) ALLOCATIONS.—From amounts authorized under
24 subsection (a), the following sums are authorized:



1 (1) For activities under section 932(b)(2),
2 \$28,000,000 for each of the fiscal years 2006
3 through 2010.

4 (2) For activities under section 934—
5 (A) for fiscal year 2006, \$12,000,000;
6 (B) for fiscal year 2007, \$15,000,000; and
7 (C) for each of fiscal years 2008 through
8 2010, \$20,000,000.

9 (3) For activities under section 935—
10 (A) for fiscal year 2006, \$259,000,000;
11 (B) for fiscal year 2007, \$272,000,000;
12 (C) for fiscal year 2008, \$285,000,000;
13 (D) for fiscal year 2009, \$298,000,000;
14 and
15 (E) for fiscal year 2010, \$308,000,000.

16 (4) For the Office of Arctic Energy under sec-
17 tion 3197 of the Floyd D. Spence National Defense
18 Authorization Act for Fiscal Year 2001 (42 U.S.C.
19 7144d), \$25,000,000 for each of fiscal years 2006
20 through 2010.

21 (5) For activities under section 933,
22 \$4,000,000 for fiscal year 2006 and \$2,000,000 for
23 each of fiscal years 2007 through 2010.

24 (c) EXTENDED AUTHORIZATION.—There are author-
25 ized to be appropriated to the Secretary for the Office of



1 Arctic Energy under section 3197 of the Floyd D. Spence
2 National Defense Authorization Act for Fiscal Year 2001
3 (42 U.S.C. 7144d), \$25,000,000 for each of fiscal years
4 2009 through 2012.

5 (d) LIMITS ON USE OF FUNDS.—

6 (1) NO FUNDS FOR CERTAIN PROGRAMS.—None
7 of the funds authorized under this section may be
8 used for Fossil Energy Environmental Restoration
9 or Import/Export Authorization.

10 (2) INSTITUTIONS OF HIGHER EDUCATION.—Of
11 the funds authorized under subsection (b)(2), not
12 less than 20 percent of the funds appropriated for
13 each fiscal year shall be dedicated to activities car-
14 ried out at institutions of higher education.

15 **SEC. 932. OIL AND GAS STUDIES.**

16 (a) OIL AND GAS STUDIES.—The Secretary shall
17 conduct a program of studies on oil and gas, including—

18 (1) exploration and production;

19 (2) gas hydrates;

20 (3) reservoir life and extension;

21 (4) transportation and distribution infrastruc-
22 ture;

23 (5) ultraclean fuels;

24 (6) heavy oil and oil shale;

25 (7) related environmental research; and



1 (8) compressed natural gas marine transport.

2 (b) FUEL CELLS.—

3 (1) IN GENERAL.—The Secretary shall conduct
4 a program of studies on fuel cells for low-cost, high-
5 efficiency, fuel-flexible, modular power systems.

6 (2) IMPROVED MANUFACTURING PRODUCTION
7 AND PROCESSES.—The studies under paragraph (1)
8 shall include fuel cell technology for commercial, res-
9 idential, and transportation applications, and distrib-
10 uted generation systems, utilizing improved manu-
11 facturing production and processes.

12 (c) NATURAL GAS AND OIL DEPOSITS REPORT.—

13 Not later than 2 years after the date of enactment of this
14 Act, and every 2 years thereafter, the Secretary of the In-
15 terior, in consultation with other appropriate Federal
16 agencies, shall transmit a report to Congress of the latest
17 estimates of natural gas and oil reserves, reserves growth,
18 and undiscovered resources in Federal and State waters
19 off the coast of Louisiana and Texas.

20 (d) INTEGRATED CLEAN POWER AND ENERGY.—

21 (1) NATIONAL CENTER OR CONSORTIUM OF EX-
22 CELLENCE.—The Secretary shall establish a na-
23 tional center or consortium of excellence in clean en-
24 ergy and power generation to address the Nation's



1 critical dependence on energy and the need to reduce
2 emissions.

3 (2) PROGRAM.—The center or consortium shall
4 conduct a program integrating the following focus
5 areas:

6 (A) Efficiency and reliability of gas tur-
7 bines for power generation.

8 (B) Reduction in emissions from power
9 generation.

10 (C) Promotion of energy conservation
11 issues.

12 (D) Effectively utilizing alternative fuels
13 and renewable energy.

14 (E) Advanced materials technology for oil
15 and gas exploration and utilization in harsh en-
16 vironments.

17 (F) Education on energy and power gen-
18 eration issues.

19 **SEC. 933. TECHNOLOGY TRANSFER.**

20 The Secretary shall establish a competitive program
21 to award a contract to a nonprofit entity for the purpose
22 of transferring technologies developed with public funds.
23 The entity selected under this section shall have experi-
24 ence in offshore oil and gas technology management, in
25 the transfer of technologies developed with public funds



1 to the offshore and maritime industry, and in management
2 of an offshore and maritime industry consortium. The pro-
3 gram consortium selected under section 942 shall not be
4 eligible for selection under this section. When appropriate,
5 the Secretary shall consider utilizing the entity selected
6 under this section when implementing the activities au-
7 thorized by section 975.

8 **SEC. 934. COAL MINING TECHNOLOGIES.**

9 (a) ESTABLISHMENT.—The Secretary shall carry out
10 a program of studies on coal mining technologies. The
11 Secretary shall cooperate with appropriate Federal agen-
12 cies, coal producers, trade associations, equipment manu-
13 facturers, institutions of higher education with mining en-
14 gineering departments, and other relevant entities.

15 (b) PROGRAM.—The activities carried out under this
16 section shall—

17 (1) be guided by the mining priorities identified
18 by the Mining Industry of the Future Program and
19 in the recommendations from relevant reports of the
20 National Academy of Sciences on mining tech-
21 nologies; and

22 (2) include activities exploring minimization of
23 contaminants in mined coal that contribute to envi-
24 ronmental concerns.



1 **SEC. 935. COAL AND RELATED TECHNOLOGIES PROGRAM.**

2 (a) IN GENERAL.—In addition to the programs au-
3 thorized under title IV, the Secretary shall conduct a pro-
4 gram of technology to study coal and power systems, in-
5 cluding programs to facilitate production and generation
6 of coal-based power through—

- 7 (1) innovations for existing plants;
- 8 (2) integrated gasification combined cycle;
- 9 (3) advanced combustion systems;
- 10 (4) turbines for synthesis gas derived from coal;
- 11 (5) carbon capture and sequestration;
- 12 (6) coal-derived transportation fuels and chemi-
13 cals;
- 14 (7) solid fuels and feedstocks;
- 15 (8) advanced studies;
- 16 (9) advanced separation technologies; and
- 17 (10) a joint project for permeability enhance-
18 ment in coals for natural gas production and carbon
19 dioxide sequestration.

20 (b) COST AND PERFORMANCE GOALS.—In carrying
21 out programs authorized by this section, the Secretary
22 shall identify cost and performance goals for coal-based
23 technologies that would permit the continued cost-com-
24 petitive use of coal for electricity generation, as chemical
25 feedstocks, and as transportation fuel in 2007, 2015, and



1 the years after 2020. In establishing such cost and per-
2 formance goals, the Secretary shall—

3 (1) consider activities and studies undertaken
4 to date by industry in cooperation with the Depart-
5 ment in support of such assessment;

6 (2) consult with interested entities, including
7 coal producers, industries using coal, organizations
8 to promote coal and advanced coal technologies, en-
9 vironmental organizations, and organizations rep-
10 resenting workers;

11 (3) not later than 120 days after the date of
12 enactment of this Act, publish in the Federal Reg-
13 ister proposed draft cost and performance goals for
14 public comments; and

15 (4) not later than 180 days after the date of
16 enactment of this Act and every 4 years thereafter,
17 submit to Congress a report describing final cost
18 and performance goals for such technologies that in-
19 cludes a list of technical milestones as well as an ex-
20 planation of how programs authorized in this section
21 will not duplicate the activities authorized under the
22 Clean Coal Power Initiative authorized under sub-
23 title A of title IV.



1 **SEC. 936. COMPLEX WELL TECHNOLOGY TESTING FACIL-**
2 **ITY.**

3 The Secretary, in coordination with industry leaders
4 in extended research drilling technology, shall establish a
5 Complex Well Technology Testing Facility at the Rocky
6 Mountain Oilfield Testing Center to increase the range of
7 extended drilling technologies.

8 **PART II—ULTRA-DEEPWATER AND UNCONVEN-**
9 **TIONAL NATURAL GAS AND OTHER PETRO-**
10 **LEUM RESOURCES**

11 **SEC. 941. PROGRAM AUTHORITY.**

12 (a) IN GENERAL.—The Secretary shall carry out a
13 program under this part regarding technologies for ultra-
14 deepwater and unconventional natural gas and other pe-
15 troleum resource exploration and production, including ad-
16 dressing the technology challenges for small producers,
17 safe operations, and environmental mitigation (including
18 reduction of greenhouse gas emissions and sequestration
19 of carbon).

20 (b) PROGRAM ELEMENTS.—The program under this
21 part shall address the following areas, including improving
22 safety and minimizing environmental impacts of activities
23 within each area:

24 (1) Ultra-deepwater technology, including drill-
25 ing to formations in the Outer Continental Shelf to
26 depths greater than 15,000 feet.



1 (2) Ultra-deepwater architecture.

2 (3) Unconventional natural gas and other petro-
3 leum resource exploration and production tech-
4 nology, including the technology challenges of small
5 producers.

6 (c) LIMITATION ON LOCATION OF FIELD ACTIVI-
7 TIES.—Field activities under the program under this part
8 shall be carried out only—

9 (1) in—

10 (A) areas in the territorial waters of the
11 United States not under any Outer Continental
12 Shelf moratorium as of September 30, 2002;

13 (B) areas onshore in the United States on
14 public land administered by the Secretary of the
15 Interior available for oil and gas leasing, where
16 consistent with applicable law and land use
17 plans; and

18 (C) areas onshore in the United States on
19 State or private land, subject to applicable law;
20 and

21 (2) with the approval of the appropriate Fed-
22 eral or State land management agency or private
23 land owner.



1 (d) CONSULTATION WITH SECRETARY OF THE INTE-
2 RIOR.—In carrying out this part, the Secretary shall con-
3 sult regularly with the Secretary of the Interior.

4 **SEC. 942. ULTRA-DEEPWATER PROGRAM.**

5 (a) IN GENERAL.—The Secretary shall carry out the
6 activities under section 941(a), to maximize the use of the
7 ultra-deepwater natural gas and other petroleum resources
8 of the United States by increasing the supply of such re-
9 sources, through reducing the cost and increasing the effi-
10 ciency of exploration for and production of such resources,
11 while improving safety and minimizing environmental im-
12 pacts.

13 (b) ROLE OF THE SECRETARY.—The Secretary shall
14 have ultimate responsibility for, and oversight of, all as-
15 pects of the program under this section.

16 (c) ROLE OF THE PROGRAM CONSORTIUM.—

17 (1) IN GENERAL.—The Secretary may contract
18 with a consortium to—

19 (A) manage awards pursuant to subsection
20 (f)(4);

21 (B) make recommendations to the Sec-
22 retary for project solicitations;

23 (C) disburse funds awarded under sub-
24 section (f) as directed by the Secretary in ac-



1 cordance with the annual plan under subsection
2 (e); and

3 (D) carry out other activities assigned to
4 the program consortium by this section.

5 (2) LIMITATION.—The Secretary may not as-
6 sign any activities to the program consortium except
7 as specifically authorized under this section.

8 (3) CONFLICT OF INTEREST.—

9 (A) PROCEDURES.—The Secretary shall
10 establish procedures—

11 (i) to ensure that each board member,
12 officer, or employee of the program consor-
13 tium who is in a decision-making capacity
14 under subsection (f)(3) or (4) shall disclose
15 to the Secretary any financial interests in,
16 or financial relationships with, applicants
17 for or recipients of awards under this sec-
18 tion, including those of his or her spouse
19 or minor child, unless such relationships or
20 interests would be considered to be remote
21 or inconsequential; and

22 (ii) to require any board member, offi-
23 cer, or employee with a financial relation-
24 ship or interest disclosed under clause (i)
25 to recuse himself or herself from any re-



1 view under subsection (f)(3) or oversight
2 under subsection (f)(4) with respect to
3 such applicant or recipient.

4 (B) FAILURE TO COMPLY.—The Secretary
5 may disqualify an application or revoke an
6 award under this section if a board member, of-
7 ficer, or employee has failed to comply with pro-
8 cedures required under subparagraph (A)(ii).

9 (d) SELECTION OF THE PROGRAM CONSORTIUM.—

10 (1) IN GENERAL.—The Secretary shall select
11 the program consortium through an open, competi-
12 tive process.

13 (2) MEMBERS.—The program consortium may
14 include corporations, trade associations, institutions
15 of higher education, National Laboratories, or other
16 research institutions. After submitting a proposal
17 under paragraph (4), the program consortium may
18 not add members without the consent of the Sec-
19 retary.

20 (3) TAX STATUS.—The program consortium
21 shall be an entity that is exempt from tax under sec-
22 tion 501(c)(3) of the Internal Revenue Code of
23 1986.

24 (4) SCHEDULE.—Not later than 180 days after
25 the date of enactment of this Act, the Secretary



1 shall solicit proposals from eligible consortia to per-
2 form the duties in subsection (c)(1), which shall be
3 submitted not later than 360 days after the date of
4 enactment of this Act. The Secretary shall select the
5 program consortium not later than 18 months after
6 such date of enactment.

7 (5) APPLICATION.—Applicants shall submit a
8 proposal including such information as the Secretary
9 may require. At a minimum, each proposal shall—

10 (A) list all members of the consortium;

11 (B) fully describe the structure of the con-
12 sortium, including any provisions relating to in-
13 tellectual property; and

14 (C) describe how the applicant would carry
15 out the activities of the program consortium
16 under this section.

17 (6) CRITERION.—The Secretary shall consider
18 the amount of the fee an applicant proposes to re-
19 ceive under subsection (g) in selecting a consortium
20 under this section.

21 (e) ANNUAL PLAN.—

22 (1) IN GENERAL.—The program under this sec-
23 tion shall be carried out pursuant to an annual plan
24 prepared by the Secretary in accordance with para-
25 graph (2).



1 (2) DEVELOPMENT.—

2 (A) SOLICITATION OF RECOMMENDA-
3 TIONS.—Before drafting an annual plan under
4 this subsection, the Secretary shall solicit spe-
5 cific written recommendations from the pro-
6 gram consortium for each element to be ad-
7 dressed in the plan, including those described in
8 paragraph (4). The Secretary may request that
9 the program consortium submit its rec-
10 ommendations in the form of a draft annual
11 plan.

12 (B) SUBMISSION OF RECOMMENDATIONS;
13 OTHER COMMENT.—The Secretary shall submit
14 the recommendations of the program consor-
15 tium under subparagraph (A) to the Ultra-
16 Deepwater Advisory Committee established
17 under section 945(a) for review, and such Advi-
18 sory Committee shall provide to the Secretary
19 written comments by a date determined by the
20 Secretary. The Secretary may also solicit com-
21 ments from any other experts.

22 (C) CONSULTATION.—The Secretary shall
23 consult regularly with the program consortium
24 throughout the preparation of the annual plan.



1 (3) PUBLICATION.—The Secretary shall trans-
2 mit to Congress and publish in the Federal Register
3 the annual plan, along with any written comments
4 received under paragraph (2)(A) and (B).

5 (4) CONTENTS.—The annual plan shall describe
6 the ongoing and prospective activities of the pro-
7 gram under this section and shall include—

8 (A) a list of any solicitations for awards
9 that the Secretary plans to issue to carry out
10 research, development, demonstration, or com-
11 mercial application activities, including the top-
12 ics for such work, who would be eligible to
13 apply, selection criteria, and the duration of
14 awards; and

15 (B) a description of the activities expected
16 of the program consortium to carry out sub-
17 section (f)(4).

18 (5) ESTIMATES OF INCREASED ROYALTY RE-
19 CEIPTS.—The Secretary, in consultation with the
20 Secretary of the Interior, shall provide an annual re-
21 port to Congress with the President's budget on the
22 estimated cumulative increase in Federal royalty re-
23 ceipts (if any) resulting from the implementation of
24 this part. The initial report under this paragraph
25 shall be submitted in the first President's budget fol-



1 lowing the completion of the first annual plan re-
2 quired under this subsection.

3 (f) AWARDS.—

4 (1) IN GENERAL.—The Secretary shall make
5 awards to carry out activities under the program
6 under this section. The program consortium shall
7 not be eligible to receive such awards, but members
8 of the program consortium may receive such awards.

9 (2) PROPOSALS.—The Secretary shall solicit
10 proposals for awards under this subsection in such
11 manner and at such time as the Secretary may pre-
12 scribe, in consultation with the program consortium.

13 (3) REVIEW.—The Secretary shall make awards
14 under this subsection through a competitive process,
15 which shall include a review by individuals selected
16 by the Secretary. Such individuals shall include, for
17 each application, Federal officials, the program con-
18 sortium, and non-Federal experts who are not board
19 members, officers, or employees of the program con-
20 sortium or of a member of the program consortium.

21 (4) OVERSIGHT.—

22 (A) IN GENERAL.—The program Consor-
23 tium shall oversee the implementation of
24 awards under this subsection, consistent with
25 the annual plan under subsection (e), including



1 disbursing funds and monitoring activities car-
2 ried out under such awards for compliance with
3 the terms and conditions of the awards.

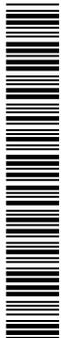
4 (B) EFFECT.—Nothing in subparagraph
5 (A) shall limit the authority or responsibility of
6 the Secretary to oversee awards, or limit the
7 authority of the Secretary to review or revoke
8 awards.

9 (C) PROVISION OF INFORMATION.—The
10 Secretary shall provide to the program consor-
11 tium the information necessary for the program
12 consortium to carry out its responsibilities
13 under this paragraph.

14 (g) ADMINISTRATIVE COSTS.—

15 (1) IN GENERAL.—To compensate the program
16 consortium for carrying out its activities under this
17 section, the Secretary shall provide to the program
18 consortium funds sufficient to administer the pro-
19 gram. This compensation may include a manage-
20 ment fee consistent with Department of Energy con-
21 tracting practices and procedures.

22 (2) ADVANCE.—The Secretary shall advance
23 funds to the program consortium upon selection of
24 the consortium, which shall be deducted from
25 amounts to be provided under paragraph (1).



1 (h) AUDIT.—The Secretary shall retain an inde-
2 pendent, commercial auditor to determine the extent to
3 which funds provided to the program consortium, and
4 funds provided under awards made under subsection (f),
5 have been expended in a manner consistent with the pur-
6 poses and requirements of this part. The auditor shall
7 transmit a report annually to the Secretary, who shall
8 transmit the report to Congress, along with a plan to rem-
9 edy any deficiencies cited in the report.

10 **SEC. 943. UNCONVENTIONAL NATURAL GAS AND OTHER PE-**
11 **TROLEUM RESOURCES PROGRAM.**

12 (a) IN GENERAL.—The Secretary shall carry out ac-
13 tivities under subsection 941(b)(3), to maximize the use
14 of the onshore unconventional natural gas and other petro-
15 leum resources of the United States, by increasing the
16 supply of such resources, through reducing the cost and
17 increasing the efficiency of exploration for and production
18 of such resources, while improving safety and minimizing
19 environmental impacts.

20 (b) AWARDS.—

21 (1) IN GENERAL.—The Secretary shall carry
22 out this section through awards to consortia made
23 through an open, competitive process. As a condition
24 of award of funds, qualified consortia shall—



1 (A) demonstrate capability and experience
2 in unconventional onshore natural gas or other
3 petroleum technologies;

4 (B) provide a research plan that dem-
5 onstrates how additional natural gas or oil pro-
6 duction will be achieved; and

7 (C) at the request of the Secretary, provide
8 technical advice to the Secretary for the pur-
9 poses of developing the annual plan required
10 under subsection (e).

11 (2) PRODUCTION POTENTIAL.—The Secretary
12 shall seek to ensure that the number and types of
13 awards made under this subsection have reasonable
14 potential to lead to additional oil and natural gas
15 production on Federal lands.

16 (3) SCHEDULE.—To carry out this subsection,
17 not later than 180 days after the date of enactment
18 of this Act, the Secretary shall solicit proposals from
19 consortia, which shall be submitted not later than
20 360 days after the date of enactment of this Act.
21 The Secretary shall select the first group of research
22 consortia to receive awards under this subsection not
23 later than 18 months after such date of enactment.

24 (c) AUDIT.—The Secretary shall retain an inde-
25 pendent, commercial auditor to determine the extent to



1 which funds provided under awards made under this sec-
2 tion have been expended in a manner consistent with the
3 purposes and requirements of this part. The auditor shall
4 transmit a report annually to the Secretary, who shall
5 transmit the report to Congress, along with a plan to rem-
6 edy any deficiencies cited in the report.

7 (d) FOCUS AREAS FOR AWARDS.—

8 (1) UNCONVENTIONAL RESOURCES.—Awards
9 from allocations under section 949(d)(2) shall focus
10 on areas including advanced coalbed methane, deep
11 drilling, natural gas production from tight sands,
12 natural gas production from gas shales, stranded
13 gas, innovative exploration and production tech-
14 niques, enhanced recovery techniques, and environ-
15 mental mitigation of unconventional natural gas and
16 other petroleum resources exploration and produc-
17 tion.

18 (2) SMALL PRODUCERS.—Awards from alloca-
19 tions under section 949(d)(3) shall be made to con-
20 sortia consisting of small producers or organized pri-
21 marily for the benefit of small producers, and shall
22 focus on areas including complex geology involving
23 rapid changes in the type and quality of the oil and
24 gas reservoirs across the reservoir; low reservoir
25 pressure; unconventional natural gas reservoirs in



1 coalbeds, deep reservoirs, tight sands, or shales; and
2 unconventional oil reservoirs in tar sands and oil
3 shales.

4 (e) ANNUAL PLAN.—

5 (1) IN GENERAL.—The program under this sec-
6 tion shall be carried out pursuant to an annual plan
7 prepared by the Secretary in accordance with para-
8 graph (2).

9 (2) DEVELOPMENT.—

10 (A) WRITTEN RECOMMENDATIONS.—Be-
11 fore drafting an annual plan under this sub-
12 section, the Secretary shall solicit specific writ-
13 ten recommendations from the consortia receiv-
14 ing awards under subsection (b) and the Un-
15 conventional Resources Technology Advisory
16 Committee for each element to be addressed in
17 the plan, including those described in subpara-
18 graph (D).

19 (B) CONSULTATION.—The Secretary shall
20 consult regularly with the consortia throughout
21 the preparation of the annual plan.

22 (C) PUBLICATION.—The Secretary shall
23 transmit to Congress and publish in the Fed-
24 eral Register the annual plan, along with any



1 written comments received under subparagraph
2 (A).

3 (D) CONTENTS.—The annual plan shall
4 describe the ongoing and prospective activities
5 under this section and shall include a list of any
6 solicitations for awards that the Secretary plans
7 to issue to carry out activities, including the
8 topics for such work, who would be eligible to
9 apply, selection criteria, and the duration of
10 awards.

11 (3) ESTIMATES OF INCREASED ROYALTY RE-
12 CEIPTS.—The Secretary, in consultation with the
13 Secretary of the Interior, shall provide an annual re-
14 port to Congress with the President's budget on the
15 estimated cumulative increase in Federal royalty re-
16 ceipts (if any) resulting from the implementation of
17 this part. The initial report under this paragraph
18 shall be submitted in the first President's budget fol-
19 lowing the completion of the first annual plan re-
20 quired under this subsection.

21 **SEC. 944. ADDITIONAL REQUIREMENTS FOR AWARDS.**

22 (a) DEMONSTRATION PROJECTS.—An application for
23 an award under this part for a demonstration project shall
24 describe with specificity the intended commercial use of
25 the technology to be demonstrated.



1 (b) FLEXIBILITY IN LOCATING DEMONSTRATION
2 PROJECTS.—Subject to the limitation in section 941(c),
3 a demonstration project under this part relating to an
4 ultra-deepwater technology or an ultra-deepwater architec-
5 ture may be conducted in deepwater depths.

6 (c) INTELLECTUAL PROPERTY AGREEMENTS.—If an
7 award under this part is made to a consortium (other than
8 the program consortium), the consortium shall provide to
9 the Secretary a signed contract agreed to by all members
10 of the consortium describing the rights of each member
11 to intellectual property used or developed under the award.

12 (d) TECHNOLOGY TRANSFER.—2.5 percent of the
13 amount of each award made under this part shall be des-
14 ignated for technology transfer and outreach activities
15 under this title.

16 (e) COST SHARING REDUCTION FOR INDEPENDENT
17 PRODUCERS.—In applying the cost sharing requirements
18 under section 972 to an award under this part the Sec-
19 retary may reduce or eliminate the non-Federal require-
20 ment if the Secretary determines that the reduction is nec-
21 essary and appropriate considering the technological risks
22 involved in the project.

23 **SEC. 945. ADVISORY COMMITTEES.**

24 (a) ULTRA-DEEPWATER ADVISORY COMMITTEE.—



1 (1) ESTABLISHMENT.—Not later than 270 days
2 after the date of enactment of this Act, the Sec-
3 retary shall establish an advisory committee to be
4 known as the Ultra-Deepwater Advisory Committee.

5 (2) MEMBERSHIP.—The advisory committee
6 under this subsection shall be composed of members
7 appointed by the Secretary including—

8 (A) individuals with extensive experience or
9 operational knowledge of offshore natural gas
10 and other petroleum exploration and produc-
11 tion;

12 (B) individuals broadly representative of
13 the affected interests in ultra-deepwater natural
14 gas and other petroleum production, including
15 interests in environmental protection and safe
16 operations;

17 (C) no individuals who are Federal employ-
18 ees; and

19 (D) no individuals who are board members,
20 officers, or employees of the program consor-
21 tium.

22 (3) DUTIES.—The advisory committee under
23 this subsection shall—

24 (A) advise the Secretary on the develop-
25 ment and implementation of programs under



1 this part related to ultra-deepwater natural gas
2 and other petroleum resources; and

3 (B) carry out section 942(e)(2)(B).

4 (4) COMPENSATION.—A member of the advi-
5 sory committee under this subsection shall serve
6 without compensation but shall receive travel ex-
7 penses in accordance with applicable provisions
8 under subchapter I of chapter 57 of title 5, United
9 States Code.

10 (b) UNCONVENTIONAL RESOURCES TECHNOLOGY
11 ADVISORY COMMITTEE.—

12 (1) ESTABLISHMENT.—Not later than 270 days
13 after the date of enactment of this Act, the Sec-
14 retary shall establish an advisory committee to be
15 known as the Unconventional Resources Technology
16 Advisory Committee.

17 (2) MEMBERSHIP.—The advisory committee
18 under this subsection shall be composed of members
19 appointed by the Secretary including—

20 (A) a majority of members who are em-
21 ployees or representatives of independent pro-
22 ducers of natural gas and other petroleum, in-
23 cluding small producers;

24 (B) individuals with extensive research ex-
25 perience or operational knowledge of unconven-



1 tional natural gas and other petroleum resource
2 exploration and production;

3 (C) individuals broadly representative of
4 the affected interests in unconventional natural
5 gas and other petroleum resource exploration
6 and production, including interests in environ-
7 mental protection and safe operations; and

8 (D) no individuals who are Federal em-
9 ployees.

10 (3) DUTIES.—The advisory committee under
11 this subsection shall advise the Secretary on the de-
12 velopment and implementation of activities under
13 this part related to unconventional natural gas and
14 other petroleum resources.

15 (4) COMPENSATION.—A member of the advi-
16 sory committee under this subsection shall serve
17 without compensation but shall receive travel ex-
18 penses in accordance with applicable provisions
19 under subchapter I of chapter 57 of title 5, United
20 States Code.

21 (c) PROHIBITION.—No advisory committee estab-
22 lished under this section shall make recommendations on
23 funding awards to particular consortia or other entities,
24 or for specific projects.



1 **SEC. 946. LIMITS ON PARTICIPATION.**

2 An entity shall be eligible to receive an award under
3 this part only if the Secretary finds—

4 (1) that the entity's participation in the pro-
5 gram under this part would be in the economic in-
6 terest of the United States; and

7 (2) that either—

8 (A) the entity is a United States-owned en-
9 tity organized under the laws of the United
10 States; or

11 (B) the entity is organized under the laws
12 of the United States and has a parent entity or-
13 ganized under the laws of a country that
14 affords—

15 (i) to United States-owned entities op-
16 portunities, comparable to those afforded
17 to any other entity, to participate in any
18 cooperative research venture similar to
19 those authorized under this part;

20 (ii) to United States-owned entities
21 local investment opportunities comparable
22 to those afforded to any other entity; and

23 (iii) adequate and effective protection
24 for the intellectual property rights of
25 United States-owned entities.



1 **SEC. 947. SUNSET.**

2 The authority provided by this part shall terminate
3 on September 30, 2014.

4 **SEC. 948. DEFINITIONS.**

5 In this part:

6 (1) **DEEPWATER.**—The term “deepwater”
7 means a water depth that is greater than 200 but
8 less than 1,500 meters.

9 (2) **INDEPENDENT PRODUCER OF OIL OR**
10 **GAS.**—

11 (A) **IN GENERAL.**—The term “independent
12 producer of oil or gas” means any person that
13 produces oil or gas other than a person to
14 whom subsection (c) of section 613A of the In-
15 ternal Revenue Code of 1986 does not apply by
16 reason of paragraph (2) (relating to certain re-
17 tailers) or paragraph (4) (relating to certain re-
18 finers) of section 613A(d) of such Code.

19 (B) **RULES FOR APPLYING PARAGRAPHS (2)**
20 **AND (4) OF SECTION 613A(d).**—For purposes of
21 subparagraph (A), paragraphs (2) and (4) of
22 section 613A(d) of the Internal Revenue Code
23 of 1986 shall be applied by substituting “cal-
24 endar year” for “taxable year” each place it ap-
25 pears in such paragraphs.



1 (3) PROGRAM CONSORTIUM.—The term “pro-
2 gram consortium” means the consortium selected
3 under section 942(d).

4 (4) REMOTE OR INCONSEQUENTIAL.—The term
5 “remote or inconsequential” has the meaning given
6 that term in regulations issued by the Office of Gov-
7 ernment Ethics under section 208(b)(2) of title 18,
8 United States Code.

9 (5) SMALL PRODUCER.—The term “small pro-
10 ducer” means an entity organized under the laws of
11 the United States with production levels of less than
12 1,000 barrels per day of oil equivalent.

13 (6) ULTRA-DEEPWATER.—The term “ultra-
14 deepwater” means a water depth that is equal to or
15 greater than 1,500 meters.

16 (7) ULTRA-DEEPWATER ARCHITECTURE.—The
17 term “ultra-deepwater architecture” means the inte-
18 gration of technologies for the exploration for, or
19 production of, natural gas or other petroleum re-
20 sources located at ultra-deepwater depths.

21 (8) ULTRA-DEEPWATER TECHNOLOGY.—The
22 term “ultra-deepwater technology” means a discrete
23 technology that is specially suited to address 1 or
24 more challenges associated with the exploration for,



1 or production of, natural gas or other petroleum re-
2 sources located at ultra-deepwater depths.

3 (9) UNCONVENTIONAL NATURAL GAS AND
4 OTHER PETROLEUM RESOURCE.—The term “uncon-
5 ventional natural gas and other petroleum resource”
6 means natural gas and other petroleum resource lo-
7 cated onshore in an economically inaccessible geo-
8 logical formation, including resources of small pro-
9 ducers.

10 **SEC. 949. FUNDING.**

11 (a) IN GENERAL.—

12 (1) OIL AND GAS LEASE INCOME.—For each of
13 fiscal years 2005 through 2014, from any Federal
14 royalties, rents, and bonuses derived from Federal
15 onshore and offshore oil and gas leases issued under
16 the Outer Continental Shelf Lands Act and the Min-
17 eral Leasing Act which are deposited in the Treas-
18 ury, and after distribution of any such funds as de-
19 scribed in subsection (c), \$50,000,000 shall be de-
20 posited into the Ultra-Deepwater and Unconven-
21 tional Natural Gas and Other Petroleum Research
22 Fund (in this section referred to as the Fund). For
23 purposes of this section, the term “royalties” ex-
24 cludes proceeds from the sale of royalty production
25 taken in kind and royalty production that is trans-



1 ferred under section 27(a)(3) of the Outer Conti-
2 nental Shelf Lands Act (43 U.S.C. 1353(a)(3)).

3 (2) AUTHORIZATION OF APPROPRIATIONS.—In
4 addition to amounts described in paragraph (1),
5 there are authorized to be appropriated to the Sec-
6 retary, to be deposited in the Fund, \$150,000,000
7 for each of the fiscal years 2005 through 2014, to
8 remain available until expended.

9 (b) OBLIGATIONAL AUTHORITY.—Monies in the
10 Fund shall be available to the Secretary for obligation
11 under this part without fiscal year limitation, to remain
12 available until expended.

13 (c) PRIOR DISTRIBUTIONS.—The distributions de-
14 scribed in subsection (a) are those required by law—

15 (1) to States and to the Reclamation Fund
16 under the Mineral Leasing Act (30 U.S.C. 191(a));
17 and

18 (2) to other funds receiving monies from Fed-
19 eral oil and gas leasing programs, including—

20 (A) any recipients pursuant to section 8(g)
21 of the Outer Continental Shelf Lands Act (43
22 U.S.C. 1337(g));

23 (B) the Land and Water Conservation
24 Fund, pursuant to section 2(c) of the Land and



1 Water Conservation Fund Act of 1965 (16
2 U.S.C. 4601–5(c));

3 (C) the Historic Preservation Fund, pursu-
4 ant to section 108 of the National Historic
5 Preservation Act (16 U.S.C. 470h); and

6 (D) the Secure Energy Reinvestment
7 Fund.

8 (d) ALLOCATION.—Amounts obligated from the Fund
9 under this section in each fiscal year shall be allocated
10 as follows:

11 (1) 50 percent shall be for activities under sec-
12 tion 942.

13 (2) 35 percent shall be for activities under sec-
14 tion 943(d)(1).

15 (3) 10 percent shall be for activities under sec-
16 tion 943(d)(2).

17 (4) 5 percent shall be for research under section
18 941(d).

19 (e) FUND.—There is hereby established in the Treas-
20 ury of the United States a separate fund to be known as
21 the “Ultra-Deepwater and Unconventional Natural Gas
22 and Other Petroleum Research Fund”.



1 **Subtitle F—Energy Sciences**

2 **SEC. 952. UNITED STATES PARTICIPATION IN ITER.**

3 (a) IN GENERAL.—The United States may partici-
4 pate in ITER in accordance with the provisions of this
5 section.

6 (b) AGREEMENT.—

7 (1) IN GENERAL.—The Secretary is authorized
8 to negotiate an agreement for United States partici-
9 pation in ITER.

10 (2) CONTENTS.—Any agreement for United
11 States participation in ITER shall, at a minimum—

12 (A) clearly define the United States finan-
13 cial contribution to construction and operating
14 costs;

15 (B) ensure that the share of ITER's high-
16 technology components manufactured in the
17 United States is at least proportionate to the
18 United States financial contribution to ITER;

19 (C) ensure that the United States will not
20 be financially responsible for cost overruns in
21 components manufactured in other ITER par-
22 ticipating countries;

23 (D) guarantee the United States full ac-
24 cess to all data generated by ITER;



1 (E) enable United States researchers to
2 propose and carry out an equitable share of the
3 experiments at ITER;

4 (F) provide the United States with a role
5 in all collective decisionmaking related to ITER;
6 and

7 (G) describe the process for discontinuing
8 or decommissioning ITER and any United
9 States role in those processes.

10 (c) PLAN.—The Secretary, in consultation with the
11 Fusion Energy Sciences Advisory Committee, shall de-
12 velop a plan for the participation of United States sci-
13 entists in ITER that shall include the United States re-
14 search agenda for ITER, methods to evaluate whether
15 ITER is promoting progress toward making fusion a reli-
16 able and affordable source of power, and a description of
17 how work at ITER will relate to other elements of the
18 United States fusion program. The Secretary shall request
19 a review of the plan by the National Academy of Sciences.

20 (d) LIMITATION.—No funds shall be expended for the
21 construction of ITER until the Secretary has transmitted
22 to Congress—

23 (1) the agreement negotiated pursuant to sub-
24 section (b) and 120 days have elapsed since that
25 transmission;



1 (2) a report describing the management struc-
2 ture of ITER and providing a fixed dollar estimate
3 of the cost of United States participation in the con-
4 struction of ITER, and 120 days have elapsed since
5 that transmission;

6 (3) a report describing how United States par-
7 ticipation in ITER will be funded without reducing
8 funding for other programs in the Office of Science,
9 including other fusion programs, and 60 days have
10 elapsed since that transmission; and

11 (4) the plan required by subsection (e) (but not
12 the National Academy of Sciences review of that
13 plan), and 60 days have elapsed since that trans-
14 mission.

15 (e) ALTERNATIVE TO ITER.—If at any time during
16 the negotiations on ITER, the Secretary determines that
17 construction and operation of ITER is unlikely or infeasible,
18 the Secretary shall send to Congress, as part of the
19 budget request for the following year, a plan for imple-
20 menting the domestic burning plasma experiment known
21 as FIRE, including costs and schedules for such a plan.
22 The Secretary shall refine such plan in full consultation
23 with the Fusion Energy Sciences Advisory Committee and
24 shall also transmit such plan to the National Academy of
25 Sciences for review.



1 (f) DEFINITIONS.—In this section and sections
2 951(b)(1) and (c):

3 (1) CONSTRUCTION.—The term “construction”
4 means the physical construction of the ITER facil-
5 ity, and the physical construction, purchase, or man-
6 ufacture of equipment or components that are spe-
7 cifically designed for the ITER facility, but does not
8 mean the design of the facility, equipment, or com-
9 ponents.

10 (2) FIRE.—The term “FIRE” means the Fu-
11 sion Ignition Research Experiment, the fusion re-
12 search experiment for which design work has been
13 supported by the Department as a possible alter-
14 native burning plasma experiment in the event that
15 ITER fails to move forward.

16 (3) ITER.—The term “ITER” means the
17 international burning plasma fusion research project
18 in which the President announced United States
19 participation on January 30, 2003.

20 **SEC. 953. PLAN FOR FUSION ENERGY SCIENCES PROGRAM.**

21 (a) DECLARATION OF POLICY.—It shall be the policy
22 of the United States to conduct a program of activities
23 to ensure that the United States is competitive with other
24 nations in providing fusion energy for its own needs and
25 the needs of other nations.



1 (b) PLANNING.—

2 (1) IN GENERAL.—Not later than 180 days
3 after the date of enactment of this Act, the Sec-
4 retary shall present to Congress a plan, with pro-
5 posed cost estimates, budgets, and potential inter-
6 national partners, for the implementation of the pol-
7 icy described in subsection (a).

8 (2) COSTS AND SCHEDULES.—Such plan shall
9 also address the status of and, to the degree pos-
10 sible, costs and schedules for—

11 (A) the design and implementation of
12 international or national facilities for the test-
13 ing of fusion materials; and

14 (B) the design and implementation of
15 international or national facilities for the test-
16 ing and development of key fusion technologies.

17 **SEC. 954. SPALLATION NEUTRON SOURCE.**

18 (a) DEFINITION.—For the purposes of this section,
19 the term “Spallation Neutron Source” means Department
20 Project 99–E–334, Oak Ridge National Laboratory, Oak
21 Ridge, Tennessee.

22 (b) REPORT.—The Secretary shall report on the
23 Spallation Neutron Source as part of the Department’s
24 annual budget submission, including a description of the
25 achievement of milestones, a comparison of actual costs



1 to estimated costs, and any changes in estimated project
2 costs or schedule.

3 (c) LIMITATIONS.—The total amount obligated by the
4 Department, including prior year appropriations, for the
5 Spallation Neutron Source shall not exceed—

6 (1) \$1,192,700,000 for costs of construction;

7 (2) \$219,000,000 for other project costs; and

8 (3) \$1,411,700,000 for total project cost.

9 **SEC. 962. NITROGEN FIXATION.**

10 The Secretary shall conduct studies on biological ni-
11 trogen fixation, including plant genomics research relevant
12 to the development of commercial crop varieties with en-
13 hanced nitrogen fixation efficiency and ability.

14 **Subtitle G—Energy and**
15 **Environment**

16 **SEC. 966. WASTE REDUCTION AND USE OF ALTERNATIVES.**

17 (a) GRANT AUTHORITY.—The Secretary may make
18 a single grant to a qualified institution to examine burning
19 post-consumer carpet in cement kilns as an alternative en-
20 ergy source. The purposes of the grant shall include
21 determining—

22 (1) how post-consumer carpet can be burned
23 without disrupting kiln operations;

24 (2) the extent to which overall kiln emissions
25 may be reduced;



1 (3) the emissions of air pollutants and other
2 relevant environmental impacts; and

3 (4) how this process provides benefits to both
4 cement kiln operations and carpet suppliers.

5 (b) QUALIFIED INSTITUTION.—For the purposes of
6 subsection (a), a qualified institution is an institution of
7 higher education with demonstrated expertise in the fields
8 of fiber recycling and logistical modeling of carpet waste
9 collection and preparation.

10 (c) AUTHORIZATION OF APPROPRIATIONS.—There
11 are authorized to be appropriated to the Secretary for car-
12 rying out this section \$500,000.

13 **SEC. 967. REPORT ON FUEL CELL TEST CENTER.**

14 (a) REPORT.—Not later than 1 year after the date
15 of enactment of this Act, the Secretary shall transmit to
16 Congress a report on the results of a study of the estab-
17 lishment of a test center for next-generation fuel cells at
18 an institution of higher education that has available a con-
19 tinuous source of hydrogen and access to the electric
20 transmission grid. Such report shall include a conceptual
21 design for such test center and a projection of the costs
22 of establishing the test center.

23 (b) AUTHORIZATION OF APPROPRIATIONS.—There
24 are authorized to be appropriated to the Secretary for car-
25 rying out this section \$500,000.



1 **SEC. 968. ARCTIC ENGINEERING RESEARCH CENTER.**

2 (a) IN GENERAL.—The Secretary of Energy (referred
3 to in this section as the “Secretary”) in consultation with
4 the Secretary of Transportation and the United States
5 Arctic Research Commission shall provide annual grants
6 to a university located adjacent to the Arctic Energy Of-
7 fice of the Department of Energy, to establish and operate
8 a university research center to be headquartered in Fair-
9 banks and to be known as the “Arctic Engineering Re-
10 search Center” (referred to in this section as the “Cen-
11 ter”).

12 (b) PURPOSE.—The purpose of the Center shall be
13 to conduct research on, and develop improved methods of,
14 construction and use of materials to improve the overall
15 performance of roads, bridges, residential, commercial,
16 and industrial structures, and other infrastructure in the
17 Arctic region, with an emphasis on developing—

18 (1) new construction techniques for roads,
19 bridges, rail, and related transportation infrastruc-
20 ture and residential, commercial, and industrial in-
21 frastructure that are capable of withstanding the
22 Arctic environment and using limited energy re-
23 sources as efficiently as possible;

24 (2) technologies and procedures for increasing
25 road, bridge, rail, and related transportation infra-
26 structure and residential, commercial, and industrial



1 infrastructure safety, reliability, and integrity in the
2 Arctic region;

3 (3) new materials and improving the perform-
4 ance and energy efficiency of existing materials for
5 the construction of roads, bridges, rail, and related
6 transportation infrastructure and residential, com-
7 mercial, and industrial infrastructure in the Arctic
8 region; and

9 (4) recommendations for new local, regional,
10 and State permitting and building codes to ensure
11 transportation and building safety and efficient en-
12 ergy use when constructing, using, and occupying
13 such infrastructure in the Arctic region.

14 (c) OBJECTIVES.—The Center shall carry out—

15 (1) basic and applied research in the subjects
16 described in subsection (b), the products of which
17 shall be judged by peers or other experts in the field
18 to advance the body of knowledge in road, bridge,
19 rail, and infrastructure engineering in the Arctic re-
20 gion; and

21 (2) an ongoing program of technology transfer
22 that makes research results available to potential
23 users in a form that can be implemented.

24 (d) AMOUNT OF GRANT.—For each of fiscal years
25 2005 through 2010, the Secretary shall provide a grant



1 in the amount of \$3,000,000 to the institution specified
2 in subsection (a) to carry out this section.

3 (e) AUTHORIZATION OF APPROPRIATIONS.—There
4 are authorized to be appropriated to carry out this section
5 \$3,000,000 for each of fiscal years 2005 through 2010.

6 **SEC. 969. BARROW GEOPHYSICAL RESEARCH FACILITY.**

7 (a) ESTABLISHMENT.—The Secretary of Commerce,
8 in consultation with the Secretaries of Energy and the In-
9 terior, the Director of the National Science Foundation,
10 and the Administrator of the Environmental Protection
11 Agency, shall establish a joint research facility in Barrow,
12 Alaska, to be known as the “Barrow Geophysical Research
13 Facility”, to support scientific research activities in the
14 Arctic.

15 (b) AUTHORIZATION OF APPROPRIATIONS.—There
16 are authorized to be appropriated to the Secretaries of
17 Commerce, Energy, and the Interior, the Director of the
18 National Science Foundation, and the Administrator of
19 the Environmental Protection Agency for the planning,
20 design, construction, and support of the Barrow Geo-
21 physical Research Facility \$61,000,000.

22 **SEC. 970. WESTERN MICHIGAN DEMONSTRATION PROJECT.**

23 The Administrator of the Environmental Protection
24 Agency, in consultation with the State of Michigan and
25 affected local officials, shall conduct a demonstration



1 project to address the effect of transported ozone and
2 ozone precursors in Southwestern Michigan. The dem-
3 onstration program shall address projected nonattainment
4 areas in Southwestern Michigan that include counties with
5 design values for ozone of less than .095 based on years
6 2000 to 2002 or the most current 3-year period of air
7 quality data. The Administrator shall assess any difficul-
8 ties such areas may experience in meeting the 8 hour na-
9 tional ambient air quality standard for ozone due to the
10 effect of transported ozone or ozone precursors into the
11 areas. The Administrator shall work with State and local
12 officials to determine the extent of ozone and ozone pre-
13 cursor transport, to assess alternatives to achieve compli-
14 ance with the 8 hour standard apart from local controls,
15 and to determine the timeframe in which such compliance
16 could take place. The Administrator shall complete this
17 demonstration project no later than 2 years after the date
18 of enactment of this section and shall not impose any re-
19 quirement or sanction that might otherwise apply during
20 the pendency of the demonstration project.

